

## PATENT COOPERATION TREATY

PCT

NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

From the INTERNATIONAL BUREAU

To:  
NOV 17 2000WASHIDA & ASSOCIATES (P)  
WASHIDA, Kimihito5th floor, Shintoshicenter Building  
24-1, Tsurumaki 1-chome  
Tama-shi, Tokyo 206-0034  
JAPON

Date of mailing (day/month/year) 06 November 2000 (06.11.00)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference 2F00089-PCT	
International application No. PCT/JP00/05621	
International publication date (day/month/year) Not yet published	
International filing date (day/month/year) 23 August 2000 (23.08.00)	Priority date (day/month/year) 23 August 1999 (23.08.99)
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. et al	

- The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
- An asterisk(\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed to Rule 17.1(c)** which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed to Rule 17.1(c)** which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
23 Augu 1999 (23.08.99)	11/235050	JP	27 Octo 2000 (27.10.00)
24 Augu 1999 (24.08.99)	11/236728	JP	27 Octo 2000 (27.10.00)
02 Sept 1999 (02.09.99)	11/248363	JP	27 Octo 2000 (27.10.00)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer Magda BOUACHA Telephone No. (41-22) 338.83.38
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## PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

WASHIDA, Kimihito  
5th floor, Shintoshicenter Building  
24-1, Tsurumaki 1-chome  
Tama-shi, Tokyo 206-0034  
JAPONRECEIVED  
FEB 13, 2001

WASHIDA &amp; ASSOCIATES (P)

Date of mailing (day/month/year) 06 February 2001 (06.02.01)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference 2F00089-PCT	
International application No. PCT/JP00/05621	International filing date (day/month/year) 23 August 2000 (23.08.00)

1. The following indications appeared on record concerning:		
<input checked="" type="checkbox"/> the applicant	<input checked="" type="checkbox"/> the inventor	<input type="checkbox"/> the agent
<input type="checkbox"/> the common representative		
Name and Address MORII, Kazutoshi 2-3-7-501, Nijigaoka, Asao-ku Kawasaki-shi, Kanagawa 215-0015 Japan	State of Nationality JP	State of Residence JP
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:		
<input type="checkbox"/> the person	<input checked="" type="checkbox"/> the name	<input type="checkbox"/> the address
<input type="checkbox"/> the nationality		
<input type="checkbox"/> the residence		
Name and Address MORII, Toshiyuki 2-3-7-501, Nijigaoka, Asao-ku Kawasaki-shi, Kanagawa 215-0015 Japan	State of Nationality JP	State of Residence JP
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
3. Further observations, if necessary:		
4. A copy of this notification has been sent to:		
<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned	
<input type="checkbox"/> the International Searching Authority	<input type="checkbox"/> the elected Offices concerned	
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:	

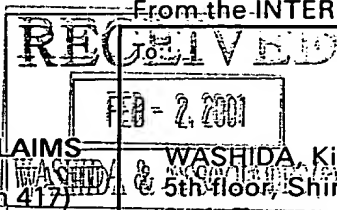
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Susumu Kube
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

**NOTIFICATION CONCERNING  
THE FILING OF AMENDMENTS OF THE CLAIMS**  
(PCT Administrative Instructions, Section 417)



WASHIDA, Kimihito  
5th floor, Shintoshicenter Building  
24-1, Tsurumaki 1-chome  
Tama-shi, Tokyo 206-0034  
JAPON

<b>Date of mailing</b> (day/month/year) 23 January 2001 (23.01.01)	
<b>Applicant's or agent's file reference</b> 2F00089-PCT	<b>IMPORTANT NOTIFICATION</b>
<b>International application No.</b> PCT/JP00/05621	<b>International filing date</b> (day/month/year) 23 August 2000 (23.08.00)
<b>Applicant</b> MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. et al	

1. The applicant is hereby notified that amendments to the claims under Article 19 were received by the International Bureau on:

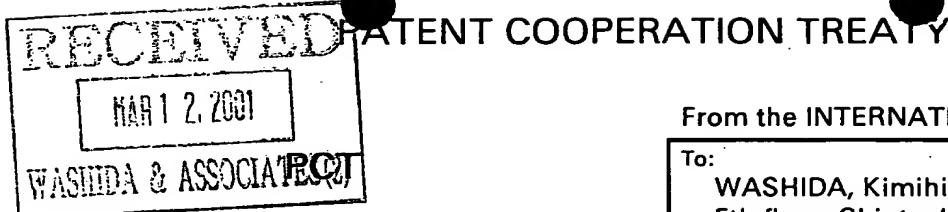
22 December 2000 (22.12.00)

2. This date is within the time limit under Rule 46.1.

Consequently, the international publication of the international application will contain the amended claims according to Rule 48.2(f), (h) and (i).

3. The applicant is reminded that the international application (description, claims and drawings) may be amended during the international preliminary examination under Chapter II, according to Article 34, and in any case, before each of the designated Offices, according to Article 28 and Rule 52, or before each of the elected Offices, according to Article 41 and Rule 78.

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorised officer</p> <p style="text-align: center;">Susumu Kubo</p> <p>Telephone No.: (41-22) 338.83.38</p>
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**NOTICE INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION TO THE DESIGNATED OFFICES**

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

WASHIDA, Kimihito  
5th floor, Shintoshicenter Building  
24-1, Tsurumaki 1-chome  
Tama-shi, Tokyo 206-0034  
JAPON

Date of mailing (day/month/year) 01 March 2001 (01.03.01)		<b>IMPORTANT NOTICE</b>	
Applicant's or agent's file reference 2F00089-PCT			
International application No. PCT/JP00/05621	International filing date (day/month/year) 23 August 2000 (23.08.00)	Priority date (day/month/year) 23 August 1999 (23.08.99)	
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. et al			

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:  
AU,KP,KR,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE,AG,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,BZ,CA,CH,CN,CR,CU,CZ,DE,DK,DM,DZ,EA,EE,EP,ES,FI,GB,GD,GE,GH,GM,HR,HU,ID,IL,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MN,MW,MX,MZ,NO,NZ,OA,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,  
The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on  
01 March 2001 (01.03.01) under No. WO 01/15144

**REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)**

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

**REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))**

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer J. Zahra Telephone No. (41-22) 338.83.38
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PCT

## 国際調査報告

(法8条、法施行規則第40、41条)  
[PCT18条、PCT規則43、44]

出願人又は代理人 2F 書類記号 00089-PCT	今後の手続きについては、国際調査報告の送付通知様式(PCT/ISA/220)及び下記5を参照すること。	
国際出願番号 PCT/JPO0/05621	国際出願日 (日.月.年) 23.08.00	優先日 (日.月.年) 23.08.1999
出願人(氏名又は名称) 松下電器産業株式会社		

国際調査機関が作成したこの国際調査報告を法施行規則第41条(PCT18条)の規定に従い出願人に送付する。  
この写しは国際事務局にも送付される。

この国際調査報告は、全部で 2 ページである。

☐ この調査報告に引用された先行技術文献の写しも添付されている。

## 1. 国際調査報告の基礎

a. 言語は、下記に示す場合を除くほか、この国際出願がされたものに基づき国際調査を行った。

☐ この国際調査機関に提出された国際出願の翻訳文に基づき国際調査を行った。

b. この国際出願は、ヌクレオチド又はアミノ酸配列を含んでおり、次の配列表に基づき国際調査を行った。

☐ この国際出願に含まれる書面による配列表

☐ この国際出願と共に提出されたフレキシブルディスクによる配列表

☐ 出願後に、この国際調査機関に提出された書面による配列表

☐ 出願後に、この国際調査機関に提出されたフレキシブルディスクによる配列表

☐ 出願後に提出した書面による配列表が出願時における国際出願の開示の範囲を超える事項を含まない旨の陳述書の提出があった。

☐ 書面による配列表に記載した配列とフレキシブルディスクによる配列表に記載した配列が同一である旨の陳述書の提出があった。

2. ☐ 請求の範囲の一部の調査ができない(第I欄参照)。

3. ☐ 発明の単一性が欠如している(第II欄参照)。

4. 発明の名称は ☒ 出願人が提出したものを承認する。

☐ 次に示すように国際調査機関が作成した。

5. 要約は ☒ 出願人が提出したものを承認する。

☐ 第III欄に示されているように、法施行規則第47条(PCT規則38.2(b))の規定により国際調査機関が作成した。出願人は、この国際調査報告の発送の日から1カ月以内にこの国際調査機関に意見を提出することができる。

6. 要約書とともに公表される図は、

第 4 図とする。 ☒ 出願人が示したとおりである。

☐ なし

☐ 出願人は図を示さなかった。

☐ 本図は発明の特徴を一層よく表している。

## A. 発明の属する分野の分類 (国際特許分類 (IPC))

Int. CL7 G10L19/04  
//G10L101:12

## B. 調査を行った分野

調査を行った最小限資料 (国際特許分類 (IPC))

Int. CL7 G10L19/04

最小限資料以外の資料で調査を行った分野に含まれるもの

日本国実用新案公報	1922-1996
日本国公開実用新案公報	1971-2000
日本国登録実用新案公報	1994-2000
日本国実用新案登録公報	1996-2000

国際調査で使用した電子データベース (データベースの名称、調査に使用した用語)

JICSTファイル (JOIS)

## C. 関連すると認められる文献

引用文献の カテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する 請求の範囲の番号
Y	JP, 10-233694, A (松下電器産業株式会社), 2. 9月. 1998 (2. 09. 98) &WO, 98/20483, A1&AU, 4884297, A EP, 883107, A1	1-14
A	JP, 10-282998, A (松下電器産業株式会社), 2 3. 10月. 1998 (23. 10. 98) (ファミリーなし)	1-6, 13
A	JP, 9-152897, A (株式会社日立製作所), 10. 6 月. 1997 (10. 6. 97) (ファミリーなし)	7-12, 14

☐ C欄の続きにも文献が列挙されている。☐ パテントファミリーに関する別紙を参照。

## \* 引用文献のカテゴリー

- 「A」 特に関連のある文献ではなく、一般的技術水準を示すもの  
「E」 国際出願日前の出願または特許であるが、国際出願日以後に公表されたもの  
「L」 優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献 (理由を付す)  
「O」 口頭による開示、使用、展示等に言及する文献  
「P」 国際出願日前で、かつ優先権の主張の基礎となる出願

の日の後に公表された文献

- 「T」 国際出願日又は優先日後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの  
「X」 特に関連のある文献であって、当該文献のみで発明の新規性又は進歩性がないと考えられるもの  
「Y」 特に関連のある文献であって、当該文献と他の1以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの  
「&」 同一パテントファミリー文献

国際調査を完了した日

06. 10. 00

国際調査報告の発送日

17.10.00

国際調査機関の名称及びあて先

日本国特許庁 (ISA/JP)  
郵便番号100-8915  
東京都千代田区霞が関三丁目4番3号

特許庁審査官 (権限のある職員)

渡邊 聡

5C

8622

電話番号 03-3581-1101 内線 3540

Repp  
Article

What is claimed is:

1. A speech coder comprising:

LPC synthesizing means for obtaining a synthesized speech by filtering adaptive excitation vectors and stochastic excitation vectors stored in an adaptive codebook and stochastic codebook using an LPC coefficient obtained from an input speech;

gain calculating means for calculating gains of said adaptive excitation vectors and said stochastic excitation vectors and searching codes of the adaptive excitation vectors and stochastic excitation vectors using coding distortion between said input speech and said synthesized speech obtained using said gains; and

parameter coding means for performing predictive coding of gains using the adaptive excitation vectors and stochastic excitation vectors corresponding to the codes obtained, wherein said parameter coding means comprises prediction coefficient adjusting means for adjusting a prediction coefficient used for said predictive coding according to the state of a previous subframe.

2. The speech coder according to claim 1, wherein when the state of the previous subframe is an extremely large value or an extremely small value, said prediction coefficient adjusting means adjusts said prediction coefficients so as to reduce the influence thereof.

3. The speech coder according to claim 1, wherein said parameter coding means has a codebook including gain

vectors of the adaptive excitation vectors, gain vectors of the stochastic excitation vectors and coefficients for adjusting the prediction coefficient.

4. The speech coder according to claim 3, wherein  
5 in predicting coding when a product sum between a state and a prediction coefficient is calculated, a prediction coefficient adjustment coefficient corresponding to the state is multiplied.

5. The speech coder according to claim 1, further  
10 comprising storing means for storing said adaptive excitation vectors, said stochastic excitation vectors and prediction coefficient adjustment coefficient in accordance with each state.

6. The vector quantization apparatus according to  
15 claim 5, wherein when said adaptive excitation vectors and said stochastic excitation vectors stored in said storing means are updated, said prediction coefficient adjustment coefficient is also updated.

7. A CELP-based speech coder that performs coding  
20 by decomposing one frame into a plurality of subframes, comprising:

LPC synthesizing means for obtaining a synthesized  
speech by filtering adaptive excitation vectors and  
stochastic excitation vectors stored in an adaptive  
25 codebook and stochastic codebook using an LPC  
coefficient obtained from an input speech;

gain calculating means for calculating gains of  
said adaptive excitation vectors and said stochastic



excitation vectors; and

parameter coding means for performing vector quantization of the adaptive excitation vectors and stochastic excitation vectors obtained using coding  
5 distortion between said input speech and said synthesized speech and said gain, and further comprising:

pitch analyzing means for performing a pitch analysis of a plurality of subframes making up a frame  
10 before performing an adaptive codebook search for a first subframe, finding a correlation value and calculating a value most approximate to the pitch cycle using said correlation value.

8. The speech coder according to claim 7, further  
15 comprising search range setting means for determining a lag search range of a plurality of subframes based on the correlation value and the value most approximate to the pitch cycle obtained by said pitch analyzing means.

9. The speech coder according to claim 8, wherein  
20 said search range setting means determines a provisional pitch that becomes the center of the search range using the correlation value and the value most approximate to the pitch cycle obtained by said pitch analyzing means.

10. The speech coder according to claim 9, wherein  
25 the search range setting means sets a lag search section in a specified range around the provisional pitch.

11. The speech coder according to claim 8, wherein the search range setting means sets a lag search section

by reducing the number of candidates with a short lag.

12. The speech coder according to claim 8, wherein the search range setting means performs a lag search within a set range during an adaptive codebook search.

5        13. A computer-readable recording medium storing a speech coding program, an adaptive codebook storing past synthesized excitation vector signals and a stochastic codebook storing a plurality of excitation vectors, said speech coding program comprising the steps  
10 of:

obtaining a synthesized speech by filtering adaptive excitation vectors and stochastic excitation vectors stored in said adaptive codebook and said stochastic codebook using an LPC coefficient obtained  
15 from an input speech;

calculating gains of said adaptive excitation vectors and said stochastic excitation vectors;

performing vector quantization on the adaptive excitation vectors and stochastic excitation vectors  
20 determined using coding distortion between said input speech and said synthesized speech, and said gains, wherein said vector quantization step further comprising the steps of:

determining a quantization target vector based on  
25 coding distortion between a plurality of quantization target vectors and prediction coefficients used for predictive coding; and

adjusting said prediction coefficients according

to the state of a previous subframe.

14. A computer-readable recording medium storing a speech coding program, an adaptive codebook storing past synthesized excitation vector signals and a  
5 stochastic codebook storing a plurality of excitation vectors, said speech coding program comprising the steps of:

obtaining a synthesized speech by filtering adaptive excitation vectors and stochastic excitation  
10 vectors stored in said adaptive codebook and said stochastic codebook using an LPC coefficient obtained from an input speech;

calculating gains of said adaptive excitation vectors and said stochastic excitation vectors;  
15 performing vector quantization on the adaptive excitation vectors and stochastic excitation vectors determined using coding distortion between said input speech and said synthesized speech; and

calculating a correlation value by performing a  
20 pitch analysis of a plurality of subframes making up a frame before performing an adaptive codebook search of a first subframe and calculating a value most approximate to the pitch cycle using said correlation value.